

Nine new species of Mascarene land snails (Mollusca: Gastropoda)

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Abstract

Survey work carried out in the Mascarene Islands of Réunion, Mauritius and Rodrigues in the S.W Indian Ocean over the last 10 years have yielded at least 14 new species, 9 of which are described here:- Assimineidae: *Omphalotropis stevanovitchi* ; Pomatiasidae: *Tropidophora vincentflorensi*; Helicarionidae: *Ctenophila aigretteianum*; *Erepta wendystrahmi*; *Pachystyla waynepagei*; *Dupontia affouchensis*; Streptaxidae: *Gonospira jacobsi*; *Gulella mamellensis*: *Gulella argoudi*.

Key words: Mascarene, land snails

Introduction

The land snail fauna of the Mascarene Islands (Réunion, Mauritius and Rodrigues) is relatively well known and consists of at least 146 species of which 132 are endemic (Griffiths,1996).

However field work over the last 10 years has yielded a number of new species some of which are described here. These new species come from areas hitherto poorly surveyed and from newly discovered subfossil deposits.

The subfossil sites include Limekiln Cave on Ile aux Aigrettes in the south east of Mauritius where deposits yielded shells from 53 species of non marine molluscs (Griffiths,1991) and those of Snail Rock in the mountains east of Port Louis (Griffiths,1990). These deposits were dated by the amino acid racemization dating method (Goodfriend and Mitterer, 1987; Goodfriend, 1990). The dating for snail shells from Limekiln Cave was between the end of the Pleistocene and the first half of the present Holocene warm phase i.e. 15,000-5,000 years old, while shells from Snail Rock are 2,500-1,000 years old (Goodfriend, personal communication 1992). Snail shells from the other subfossil sites on Réunion, Mauritius and Rodrigues were not dated but are believed by the author, on the basis of the state of the shells collected and the associated vertebrate remains, to date from the time of native forest clearance most at 150 years ago.

The leaf litter samples taken were in areas of remnant middle altitude and upland forest in a number of sites on Réunion and Mauritius.

The species described are readily assignable to families occurring on the Mascarene Islands and again highlight the remarkable molluscan radiation on these isolated volcanic islands.

Higher classification used herein follows Smith (1992). All type material has been lodged with the Australian Museum, Sydney. The SEM and normal photos of the types were all done at the Australian Museum

Systematics

Superfamily RISIOOIDEA

Family ASSIMINEIDAE

Subfamily **Ophalotropinae**

This subfamily is confined to southeast Asia, the southwest Pacific and the islands of the Indian Ocean. In the Mascarenes it is represented by 1 genus.

Omphalotropis Pfeiffer, 1851

This genus has the same distribution as the Subfamily. In the Mascarenes this genus is represented by 20 species including that described below.

Omphalotropis stevanovitchi sp.n.

(Plate 1, Figs. A, I)

Type material:

Holotype: Dead adult in leaf litter sample in moist upland native forest just below trig station at summit of Piton de la Petite Rivière Noire, S.W.Mauritius, alt: 828 m, coll O.Griffiths (O.G), Jan 1992 (AMS C202885).

Paratypes: three adult and subadult shells from the type locality (AMS C202863); one dead shell in leaf litter from moist native upland forest at Bassin Blanc, Mauritius, coll V. Florens Dec 1994 (AMS C202865); one worn juvenile collected in subfossil deposits at Snail Rock S.of Port Louis (20°11.4'S; 57°30.8'E). Coll. O.G June 1990. These deposits were estimated at 2,500-1,000 BP (AMS C202864). Also collected in Réunion at St Philippe; Tremblet and Takamaka, (Stévanovitch,1994). Specimens viewed before being lodged at the Paris Museum.

Description: Shell small, conical, thin for genus, covered in thin, light horny brown periostracum. Whorls 5, regularly increasing, convex, last whorl with very fine keel on the periphery. Sutures moderately impressed. Aperture oval, except along columellar where it is almost straight. Umbilicus narrow. Lip thin along lower part of the columella where it is slightly reflected outwards, otherwise unreflected. Protoconch and embryonic whorls malleated. Subsequent whorls covered by prominent, equally-spaced spiral ridges cut by irregular growth lines. Paratype from Bassin Blanc is smaller than the holotype with slightly more angulate whorls.

Dimensions of holotype: Height: 2.26mm; Diameter: 1.65mm.

Animal: Fresh dead animal uniformly dark, operculum thin horny with malleated appearance.

Remarks: This species is readily distinguished from all other Mascarene *Omphalotropis* by its distinctive spiral sculpture and very small size. *O.antelmei*, the only other *Omphalotropis* of similar size, lacks spiral sculpture, while the only other *Omphalotropis* with a sculpture of spiral ridges – *O.multilirata*, lacks the

intersecting growth lines present on *O.stevanovitchi* and is 8.5mm high. Described from fresh dead specimens collected with a leaf litter sample in native forest.

Etymology: Named for Colette Stévanovitch who has worked on Réunion land snails and first recorded this species on Réunion.

Superfamily LITTORINOIDEA

Family POMATIASIDAE

This family occurs in Europe, Africa and the southwest Indian Ocean. In the Mascarenes it is represented by 2 genera.

Tropidophora Troschel.1847

This genus occurs in Africa and the south west Indian Ocean. In the Mascarenes there are 14 species including that described below.

Tropidophora vincentflorensi sp.n.

(Plate 3, Figs. A, B, C).

Type material:

Holotype: Subfossil adult in scree under basaltic rock overhang in degraded forest S. of eastern most peak of Trois Mamelles Mountain, Mauritius. Alt: 490 m. 20°18'31"S; 57°26'43"E, coll Vincent Florens 23.5.1996 (AMS C202875).

Paratypes: Five adult and subadults from the type locality, (AMS C202878).

Description: Shell depressed, planispiral, thin. Whorls 4, the first 2 raising markedly above the plane of the shell which is formed by the last 2 whorls. On the edge of the shell there are 2 prominent spiral keels, 1 forming the shoulder of the shell, the other the periphery. The first one and a half whorls are embryonic with a sculpture of irregular dendritic lines giving way to a malleated appearance. Subsequent whorls above and below have a sculpture of low spiral ridges crossing fine radial growth lines, giving the shell a trellised appearance under magnification. On the upper part of the shell on the last whorl these spiral ridges number 10 between the suture and the first keel. The underside has a deep, wide umbilicus edged by a strong spiral ridge. The lower spiral ridges on the underside are stronger inside the umbilicus.

Lip thin very slightly reflected. Shell pale horn coloured except the 2 keels which have an alternate dashing of brown and horn. From inside the aperture these 2 keels appear solid brown.

Dimensions of holotype: Height: 7mm ; Diameter: 13mm

Remarks: Based on the shell sculpture and form, this species clearly belongs to the genus *Tropidophora*. It is readily distinguished from all other Mascarene *Tropidophora* as it is the only one that is planispiral. While planispiral *Tropidophora* occur in Madagascar, all have very different sculpture and thus this species is very different to the described Madagascan *Tropidophora* (Fischer-

Piette *et al*, 1993). This species is only known from subfossil deposits at its type locality. Despite considerable survey effort it has not been found living and is thus considered extinct.

Etymology: Named for its discoverer, Vincent Florens.

Order STYLOMMATOPHORA
Superfamily HELICARIONOIDEA
Family HELICARIONIDAE
Subfamily Ereptinae

This subfamily is endemic to the Mascarenes and Madagascar, where it is represented by nine genera.

Ctenophila Ancey, 1882

This genus occurs in Madagascar where there are two described species (Emberton, 1994) and the Mascarenes, where there are 3 species including that described below.

Ctenophila aigretteianum sp.n.
(Plate 2, Figs A, B, C).

Type material:

Holotype: Subfossil adult in limestone scree with large numbers of other snails from Limekiln Cave on Ile aux Aigrettes, Grand Port, east Mauritius, coll O.G and Carl Jones, Feb 1989 (AMS C202886).

Paratypes: 19 adult and subadult shells from the type locality, (AMS C202861).

Description: Shell discoidal, flat, pale glossy white. Whorls 4, regularly increasing. Sutures moderately impressed. Aperture oval and depressed, being slightly below the plane of the shell. Umbilicus very wide. Outer lip thin, sharp, unreflected except along the lower part of the columella where it is slightly reflected outwards. Embryonic whorls 2, smooth. Subsequent whorls with irregular colabral growth lines often more prominent above at the suture and margin of the shell.

Dimensions of holotype: Height: 1.55mm; Diameter: 2.4mm.

Remarks: The only Mascarene snail that resembles this species is *Ctenophila vorticella* with which it shares the same general shell structure and shape. However *C. vorticella* has very prominent radial ribs on both the upper and lower sides of the shell. Such ribs remain on subfossil specimens that have lost their periostracum. Such ribs are totally absent on *C. aegretteianum*. This species is only known from the subfossil deposits at its type locality. These subfossil deposits have been dated at 15,000 - 5,000 BP. It has never been found on the mainland of Mauritius and despite considerable survey effort has not been found living on Ile aux Aigrettes and is thus considered extinct.

Etymology: Named for its type locality.

Erepta Albers, 1850

This genus is endemic to Mauritius and Reunion, where there are five species including that described below.

Erepta wendystrahmi sp.n.
(Plate 2, Figs D, E, F)

Type material:

Holotype: Subfossil adult in limestone scree with large numbers of other snails, from Limekiln Cave on Ile aux Aigrettes, Grand Port, east Mauritius, coll O.G and Carl Jones, Feb 1989 (AMS C202877).

Paratypes: 43 adult and subadult shells from the type locality (AMS C202857); one adult subfossil shell in basalt scree under rock overhang, S edge of Bassin Blanc, coll V.Florens, April 1998 (AMS C202858); one adult subfossil shell in basalt scree in lava pit, 750m SE of Bassin Blanc. 20°27.3'S; 57°28.5'E, coll O.G. Jan 1997 (AMS C202859); nine adult subfossil shells in concretions on roof of Lion Mountain Cave number 2, Treize Cantons, Grand Port, east Mauritius, 20°22.73'S; 57°42.89'E, coll. O.G. and J.Hauchler Nov 1997 (AMS C202860).

Description: Shell depressed-conic, solid, periphery angular, pale glossy white. Whorls 5, regularly increasing. Sutures moderately impressed. Umbilicus minutely open or completely closed by reflected columella. About 20 distinct, low, broad, irregular, radial ridges flare out in a curved spoke-like form from the umbilicus and disappear near periphery. Outer lip thin, slightly reflected except along columella where thickened and reflected outwards. Slight callosity of columella near umbilicus. Embryonic whorls with fine spiral lines. Subsequent whorls with fine spiral lines cut by fine, closely-spaced radial lines giving shell decussate appearance under magnification. Paratypes from Lion Mountain Cave are more conical than the type.

Dimensions of holotype: Height: 4.5mm; Diameter: 8.5mm.

Remarks: *E.wendystrahmi* is the fifth species of *Erepta* in Mauritius. Of these, four occur in the subfossil deposits of Limekiln Cave. *E. stylodon* and *E. odontina* are globose and lack the decussate sculpture of *E. wendystrahmi*. *E. setiliris*, although similar in shape to *E. wendystrahmi*, has a broad, deeply excavated umbilicus. *E. thirouxi* the only *Erepta* not found in Limekiln Cave is conical and also lacks a decussate sculpture. In addition to the above differences, *E. wendystrahmi* is the only *Erepta* with the distinctive broad spoke-like ridges on the underside of the shell. *Erepta wendystrahmi* is only known from subfossil deposits. Despite considerable survey effort has not been found living on Mauritius or Ile aux Aigrettes and is thus considered extinct.

Etymology: Named for Wendy Strahm who was responsible for the establishment of Ile aux Aigrettes as a properly managed nature reserve.

Pachystyla Morch, 1852

This genus is endemic to Reunion and Mauritius where there are 3 species including that described below.

Pachystyla waynepagei sp.n.

(Plate 3, Figs. D, E, F).

Type material:

Holotype: Subfossil adult, unique specimen, in limestone scree with large numbers of other snails, from Limekiln Cave on Ile aux Aigrettes, Grand Port, east Mauritius, coll Wayne Page, June 1996 (AMS C 202871).

Description: Shell large, solid, globose with rounded periphery, white on upper whorls, last whorl orange to horn with 5 mm wide white band just above periphery. Whorls 7, regularly increasing. The suture is not impressed in the first 4 whorls and is slightly margined. In subsequent whorls the suture is deeply impressed as a result of damage which was repaired by the snail at that point. Umbilicus closed, columela broad with slight excavation down middle. Lip thin not reflected. Shell smooth with faint growth striae visible under high magnification.

Dimensions of holotype: Height 28mm; Diameter 39mm.

Remarks: The deposits at Limekiln Cave yielded only one specimen of *P. waynepagei* and many specimens of *Pachystyla bicolor*. All *P. bicolor* were very large (max diam: 48mm) with a very sharp keel. All retained evidence of the decussate sculpture that is a feature of the species. All were either bleached white or retained their complete brown colour. *P. waynepagei* by contrast completely lacks these features. Even allowing for the effect of the injury, the type's form is very distinct. The orange last whorl with its peripheral white band is also a feature absent on *P. bicolor*. *P. waynepagei* has never been found on the mainland of Mauritius and despite considerable survey effort has not been found living on Ile aux Aigrettes and is thus considered extinct.

Etymology: Named for Wayne Page of the Mauritian Wildlife Foundation who discovered the unique specimen of this species.

Dupontia Godwin-Austen, 1908

This genus is endemic to Madagascar and the Mascarenes. In the Mascarenes there are 8 species, including that described below.

Dupontia affouchensis sp.n.

(Plate 3, Figs. G, H, I)

Type material:

Holotype: Subfossil adult shell, in limestone scree with tortoise and solitaire bones, below day-light hole, Caverne L'Affouche, just east of Anse Quittor

Reserve, Plaine Corail, Rodrigues. 19°45.40'S; 63°22.12'E, coll OG and Carl Jones, Dec 1997 (AMS C202887).

Paratypes: one adult shell from the type locality (AMS C202872); one adult shell in limestone scree, Caverne Patate, Plaine Corail, Rodrigues, coll OG and Carl Jones June 1989 (AMS C 202873); 18 adult and subadult shells; in limestone scree below day-light hole, Caverne Bambara no 3, just east of Anse Quittor Reserve, Plaine Corail, Rodrigues. 19°45.36'S; 63°22'E, coll OG and Carl Jones, Dec 1997 (AMS C 202874).

Description: Shell depressed, thin, periphery rounded, pale glossy white with a thin brown band bordering the suture and continuing on the last whorl just above the periphery. Whorls 4, regularly increasing. Sutures distinctly margined. Umbilicus narrow, partially closed by reflected upper part of the culumella. Outer lip thin, sharp with no peristome. Aperture broader than high, lunate descending slightly below the plane of the shell. Shell appears smooth with fine spiral lines apparent under high magnification. In many specimens the brown band is absent.

Dimensions of holotype: Height: 5.5mm; Diameter: 11mm.

Remarks: This species has only ever been found in the limestone (Calcarinite) deposits of the South West of Rodrigues, an area of palm savannah that was completely burnt over and cleared in the 1830's. While there is an extensive radiation of *Dupontia* on Mauritius and Réunion, this is the only known *Dupontia* from Rodrigues. It differs from all other Mascarene *Dupontia* by it's slightly larger size, more globose shape and glossy white colour. It is also the only described *Dupontia* with a peripheral band. Despite considerable survey effort has not been found living on Rodrigues and is thus considered extinct.

Etymology: Named for its type locality.

Superfamily STREPTAXOIDEA

Family STREPTAXIDAE

This family is widely distributed throughout the tropical and subtropical regions of the world. In the Mascarenes there are 6 genera. The extensive radiation of Streptaxidae in the Mascarenes is one of the features of the fauna, with at least 39 species already described (Griffiths, 1996). While Madge (1938) considered that *Gonospora* is "already overcrowded with numerous very polymorphic species", the species described here are very distinct and cannot be assigned to any existing species.

Gonospora Swainson, 1840

This genus is endemic to the Mascarenes, where it is represented by 32 species including that described below.

Subgenus *Microstrophia* Möllendorff, 1887

Gonospora (Microstrophia) jacobsi sp.n.

(Plate 1, Figs. H, K)

Type material:

Holotype: Live collected adult, in dried leaf litter sample collected at base of tree in degraded moist upland native forest just below the summit on the eastern side of Mt Brise Fer, W. Mauritius at 622 m, coll O.G and Vincent Florens June 1994 (AMS C202883).

Paratypes: three adult and eight subadult or juvenile shells collected at the type locality (AMS C202866); one adult and one subadult subfossil shell, under deep rock piles below the scarp on the northern side of Snail Rock, south of Port Louis Mauritius, 20°11.4'S; 57°30.8'E, coll by O.G, June 1990 (AMS C 202867), snails from this site have been dated at 2,500 - 1,000 BP; one old dead adult shell, under rock at base of scarp, SW side of Le Morne, SW Mauritius, coll O.G May 1991 (AMS C 202868); one adult subfossil shell, under rock pile, Mt Brise Fer, coll Vincent Florens, 1997 (AMS C 202869).

Description: Shell cylindrical, but slightly broader near apex, spire flattened, translucent horn to white. Aperture elongate, set to one side and projecting tube-like away from plane of shell. Lip thickened, well reflected. Upper third of aperture nearly separated by strong protruding parietal lamina which almost touches thickening within peristome on right side of aperture. Umbilicus very narrow, slit-like in adults, extremely broad in juveniles. Whorls 7, regularly increasing. Embryonic whorl with a malleated appearance. Subsequent whorls covered with regular, prominent, backward reflected growth ridges. The subfossil paratype from Mt Brise Fer is very elongate: Height: 4 mm and has 9 whorls.

Dimensions of holotype: Height: 2.8 mm; Diameter: 1.4 mm. Aperture height: 0.9 mm; width: 0.5 mm.

Animal: Unrecorded.

Remarks: While there are six Mascarene streptaxids less than 4mm in length none of them have the flattened spire and cylindrical shape, together with the bold growth ridges, that characterise this species. The species is assigned to the subgenus *Microstrophia* because of its very widely umbilicate discoidal juvenile stage. Juveniles with their broad umbilicus and discoid shape appear at first glance to be very different to adults. *Gonospira* s.s. in comparison, have a very narrow umbilicus in the juvenile and adult stage. The 3 other species of the subgenus *Microstrophia* are also figured for comparison. (Plate 1, Figs E, F, G). This snail has been found living only at one small site on the summit of Mt Brise Fer, which is also the only place where the large endemic helicarionid *Erepta stylodon* still lives. Given its extremely limited range this species must be considered (following the IUCN classification) as threatened. Its occurrence in subfossil deposits at Snail Rock in the N.W and at Le Morne in the SW of Mauritius indicates it previously had a much broader range.

Etymology: Named for Jacob Griffiths, the eldest son of its discoverer.

Gulella Pfeiffer, 1856

This genus occurs in Africa and the south west Indian Ocean. In the Mascarenes there are two species already described as well as *G. mamellensis* and *G. argoudi* described below.

Gulella mamellensis sp.n.

(Plate 1, Figs. B, C)

Type material:

Holotype: Subfossil adult shell in scree under basaltic rock overhang in degraded forest at base of northern scarp of Trois Mamelles Mountain, coll Vincent Florens 2.I.1995 (AMS C202884).

Paratypes: four adult and subadult shells from the type locality (AMS C202870).

Description: Shell cylindrical, 7 whorls, with shell widest at level of third and forth whorls. Protoconch with faint malleations, rest of shell smooth. Aperture elongate, set to one side and projecting tube-like away from plane of shell. Lip thickened, reflected, projecting further from aperture along columella and base. Much of aperture filled by one strong protruding parietal lamina which extends from deep inside aperture to beyond plane of lip. Parietal lamina curves along most of its length towards outer lip, which it nearly joins at point of a strong labral thickening within peristome on lower right. Subadults finely perforate.

Dimensions of the holotype: Height 2.6mm; diameter:1.3mm

Remarks: The form of the aperture suggests that it might be placed in *Gonospira* (*Microstrophia*). However the absence of a broadly umbilicate juvenile stage, the smooth shell and nature of the apertural lamina and thickening place it in the genus *Gulella*. It differs from *G. antelmeana* (the only Mascarene *Gulella* with which it could be confused) which has a broad rounded aperture and a simple small parietal lamina. Despite considerable survey effort this species has not been found elsewhere and must be considered extinct.

Etymology: Named for its type locality.

Gulella argoudi sp.n.

(Plate 1, Figs. D, J)

Type material:

Holotype: Subfossil adult shell, buried 10 cm deep in dry soil under basaltic rock overhang on edge of ravine cutting the old part of Chemin Bruniquel, E. of La Saline Les Bains, Réunion, at 250 m. 21°4.8'S; 55°15.8'E, coll O.G., C.Stevanovitch and J.J.Argoud, Dec 1992 (AMS C202876).

Paratypes: One adult and one subadult shell from the type locality, (AMS C202862).

Description: Shell cylindrical, 5 whorls, with conical apex. Protoconch faintly maleated. Rest of shell with strong closely spaced, wavy, slightly oblique costulae. Aperture rounded at base. Lip thickened, well reflected. Upper part of aperture with a thickened short parietal lamina, almost meeting a blunt labral denticle about half way down labrum, which corresponds to a small external pit. Upper part of columellar has small flat process inside aperture. Umbilicus slit-like in adults, rounded and faintly perforate in juveniles.

Dimensions of holotype: Height: 3.7mm; Diameter: 1.8mm.

Remarks: The strong costulate sculpture combined with the distinctive apertural dentition separates this readily from all other Mascarene streptaxids. However the features of the shell are characteristic of the *Gulella infans* group of Southern Africa (Dr van Bruggen pers comm 1995). According to Dr van Bruggen "in the case of Réunion, occurrence of a species of the *Gulella infans* group widely distributed in southern Africa is at least remote thus we might surmise a shared ancestry of both species". *G. argoudi* is distinguished from the South African members of the *G. infans* group by its smaller size- 3.7mm vs 4.8-6.7mm high for members of the *G. infans* group (from Connolly, M., 1939). The whorls of *G. argoudi* are also more rounded. This species is thus readily distinguished from *G. infans*. *G. argoudi* forms a completely new element in the Mascarene streptaxid fauna and represents a separate, much more recent and unradiated invasion. Although described from subfossil specimens, the presence of a *Gulella* shell fragment (possibly belonging to this species) collected in leaf litter at Cap Noire, Dos-d'Ane Réunion, at 1300m, in 1992, suggests this species may still survive.

Etymology: Named for its co-discoverer, Jean-Jaques Argoud of Réunion.

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References

- Connolly, M. 1939. A monographic survey of South African non-marine mollusca. *Annals of the South African Museum*. **33(1)**: 669pp.
- Emberton, K.C. 1994. Thirty new species of Madagascan land snails (Mollusca: Gastropoda). *Proceedings of the Academy of Natural Sciences of Philadelphia* **145**: 147-189.
- Fisher-Piette, E., Blanc, Ch.P., Blanc, F., Salvat, F. 1993. Gasteropodes Terrestres Prosobranches. in *Faune de Madagascar* 80. Museum National d'Histoire Naturelle Paris. 281pp.

- Goodfriend, G.A., Mitterer, R.M. 1987. Late Quaternary Land Snails from the North Coast of Jamaica: Local extinctions and climatic change. *Palaeogeography, Palaeoclimatology, Palaeoecology*, **63**: 293-311
- Goodfriend, G.A. 1990. Patterns of racemization and epimerisation of amino acids in land snail shells over the course of the Holocene. *Geochimica et Cosmochimica Acta* **55**: 293-302.
- Griffiths, O.L. 1990. Landsnails of Le Pouce Mountain, Mauritius. *The Papustyla Manus Land Snail Society* **10/90**: 2-3.
- Griffiths, O.L. 1991. Landsnails from a Mauritian limestone cave. *The Papustyla Manus Land Snail Society* **1/91**: 12-15.
- Griffiths, O.L., Cook, A. & Wells, S.M. 1993. The diet of the introduced carnivorous snail *Euglandina rosea* in Mauritius and its implications for threatened island gastropod faunas. *Journal of Zoology, London* **229**: 79-89.
- Griffiths, O.L. 1994. A review of the land snails of Rodrigues Island (Indian Ocean) with notes on their status. *Journal of Conchology, London* **35(2)**: 157-166.
- Griffiths, O.L. 1996. Summary of the land snails of the Mascarene Islands with notes on their status. *Proceedings of the Royal Society of Arts and Sciences of Mauritius* **VI**: 37-48.
- Madge, E.H. 1938. Notes on some non-marine Mollusca of Mauritius with descriptions of four new species. *Mauritius Institute Bulletin* **1(3)**: 15-29.
- Smith, B.J. 1992. Non-Marine Mollusca. In Houston, W.W.K (ed) *Zoological Catalogue of Australia*. Canberra: AGPS 8 (xii). 405pp.
- Stevanovitch, C. 1994. *Protection des Mollusques terrestres endemiques de la Réunion*. Rapport d'étude commandé par le Ministère de L'Environnement

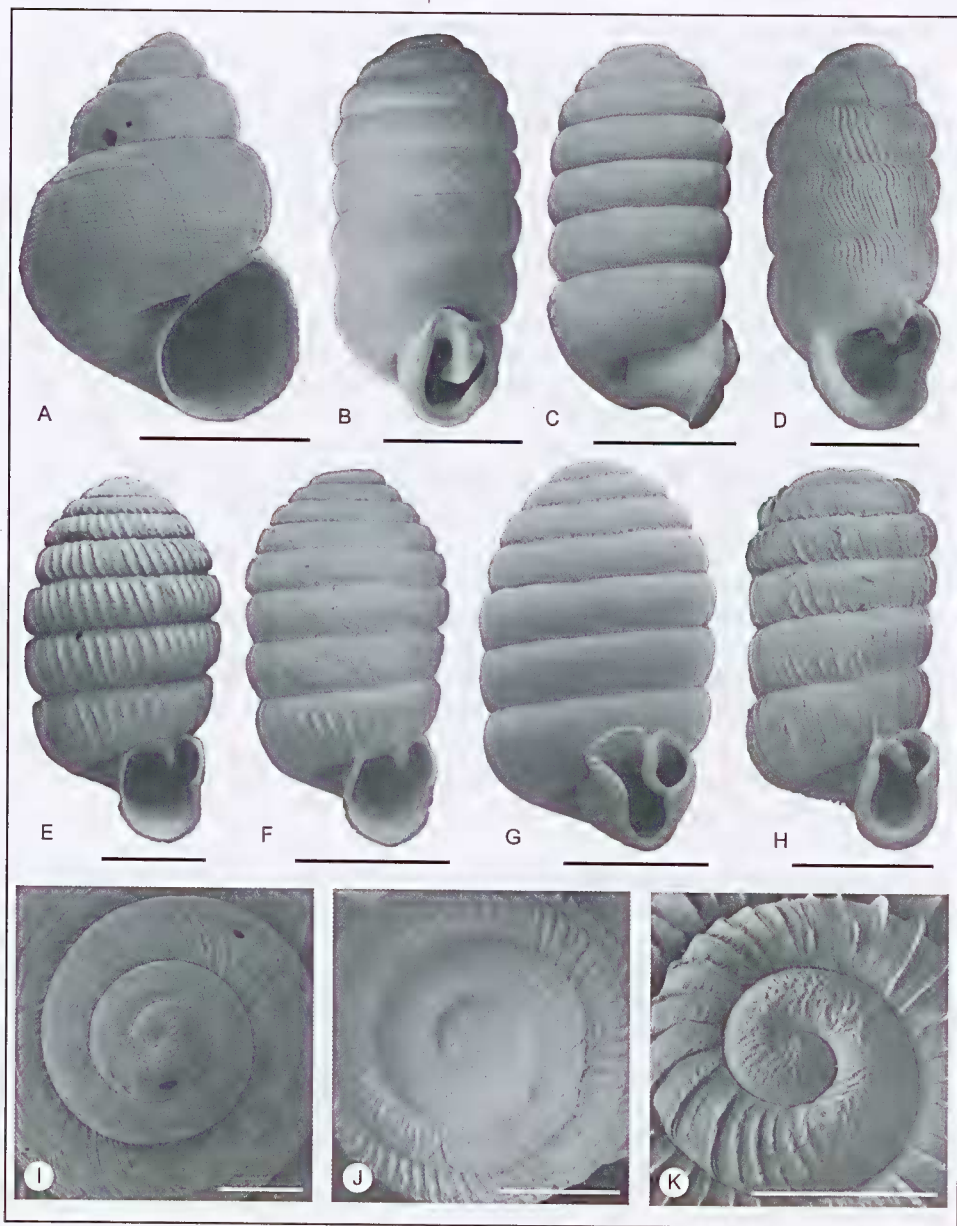


Plate 1

A. *Omphalotropis stevanovitchi* sp. n. Holotype. **B.** *Gulella mamellensis* sp.n. Holotype. **C.** *Gulella mamellensis* sp.n. Holotype. **D.** *Gulella argoudi* sp.n. Holotype. **E.** *Gonospira* (*Microstrophia*) *clavulata* (AMS C202880) Piton de la Petite Rivière Noire. **F.** *Gonospira* (*Microstrophia*) *modesta* (AMS C202881) Piton de la Petite Rivière Noire. **G.** *Gonospira* (*Microstrophia*) *nana* (AMS C202882) Nouvelle France, Mauritius. **H.** *Gonospira* (*Microstrophia*) *jacobsi* sp.n. Holotype. **I.** *Omphalotropis stevanovitchi* sp.n. protoconch. Holotype. **J.** *Gulella argoudi* sp.n. protoconch. Holotype. **K.** *Gonospira* (*Microstrophia*) *jacobsi* sp.n. protoconch. Holotype.

Scale Bars: A, B, C, D, G, H: 1mm; E, F: 2mm; I: 200µm; J, K: 500µm

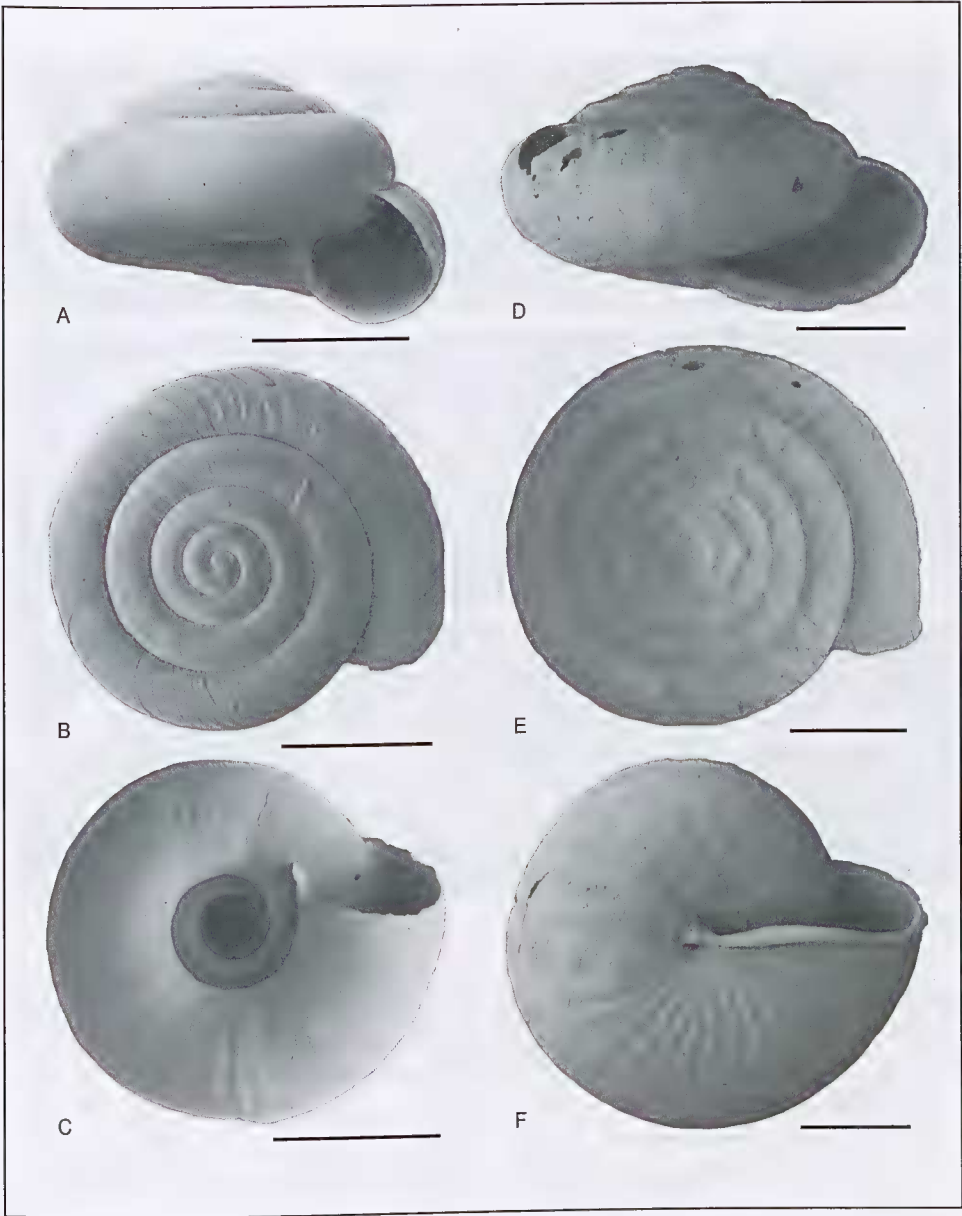


Plate 2
A, B, C. *Ctenophila aigretteianum* sp.n Holotype. **D, E, F.** *Erepta wendystrahmi* sp.n.
Holotype.
Scale Bars: **A, B, C:** 1mm; **D, E, F:** 2mm

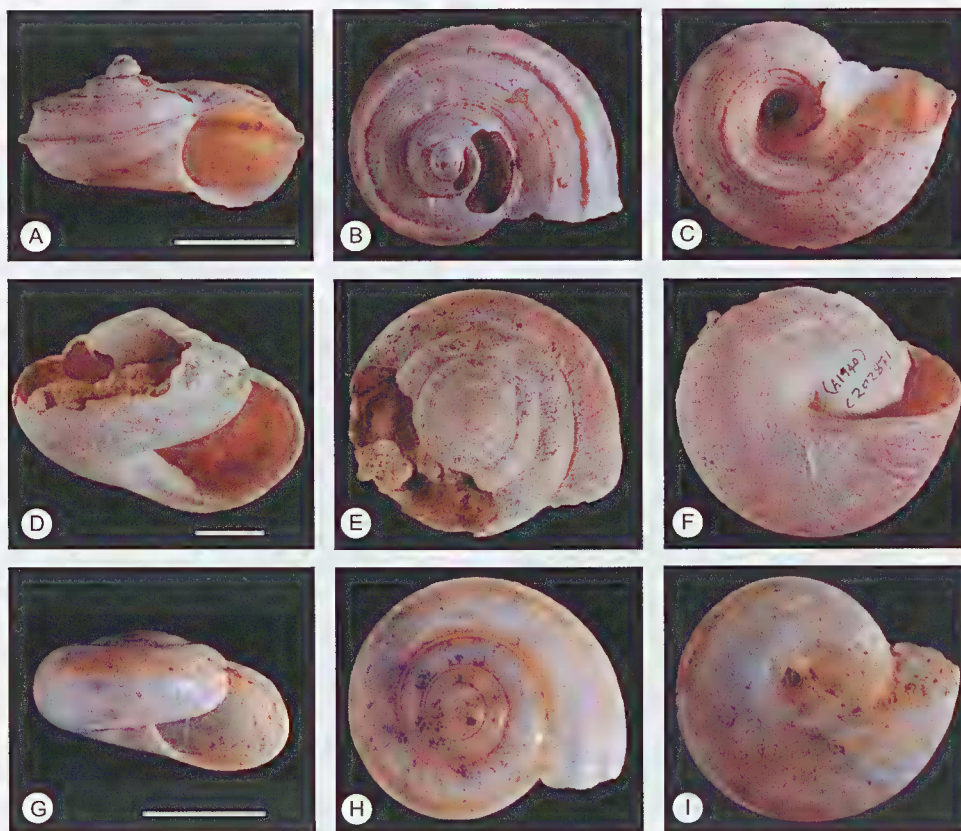


Plate 3

A, B, C. *Tropidophora vincentflorensi* sp.n. Holotype. D, E, F. *Pachystyla waynepagei* sp. n. Holotype. G, H, I. *Dupontia affouchensis* sp.n. Holotype.

Scale Bars: A, G: 5.3mm; D: 8.9mm